



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/408,437	09/29/1999	TAKASHI TAKAHASHI	2271/60102	4050

7590 03/29/2004

PAUL TENG  
C/O COOPER & DUNHAM LLP  
1185 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036

EXAMINER
----------

RODRIGUEZ, ARMANDO

ART UNIT	PAPER NUMBER
----------	--------------

2828

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/408,437	<b>Applicant(s)</b> TAKAHASHI, TAKASHI	
	<b>Examiner</b> Armando Rodriguez	<b>Art Unit</b> 2828	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-6 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 7-12 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18, 20 and 22 is/are allowed.
- 6) ☒ Claim(s) 3, 5, 6 and 19, 21 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Regarding applicant's claim to foreign priority based on Japanese application No. 10-293105, applicant had been previously reminded, see office action of March 31, 2003, of the need for an English translation as required under 37 C.F.R. 1.55. See MPEP 201.15.

The objection of claim 6 is withdrawn based on applicant's amendment.

The rejection of claims 3 and 15 under 35 U.S.C. 112 is withdrawn based on applicant's amendment.

Applicant's arguments, see pages 10-13 of applicant's arguments, filed December 8, 2003, with respect to 13-18, 20, 22 have been fully considered and are persuasive. The rejection of claims has been withdrawn.

However, independent claims 13, 19, 20 are rejected under 35 USC 112, as such claim 19 continues to be anticipated by the cited Okumura reference.

### ***Claim Objections***

Claims 5 and 21 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. It is not clear

Art Unit: 2828

within the claim language, as to the limitation pertaining to the absence of nitrogen since the cladding layers do not recite having nitrogen.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5,6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5,

It is not clear within the claim, as to the amount of Al since applicant has not defined any particular amount of Al within the layers.

Regarding claim 6,

Applicant is claiming a self-pulsating semiconductor laser device within a semiconductor device, it is not clear how the structure is obtained.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: no structure has been recited for the self-pulsating semiconductor laser device.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 6,19 are rejected under 35 U.S.C. 102(e) as being anticipated by Okumura (PN 6,456,640).

Regarding claims 6,19,

Okumura illustrates in figure 12 a conventional self-pulsating laser device having a substrate (221), a cladding layer (223), an active layer (224), a cladding layer (225) and a saturable absorber layer (226) made of InGaN, as described in column 1 lines 53-63. The InGaN is an III-V alloy material.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3,19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura (PN 6,456,640) in view of Kidoguchi et al (PN 6,118,800).

Regarding claim 19,

Okumura illustrates in figure 12 a conventional self-pulsating laser device having a substrate (221), a cladding layer (223), an active layer (224), a cladding layer (225) and a saturable absorber layer (226) made of InGaN, as described in column 1 lines 53-63.

Regarding claims 3,21,

Okumura does not disclose the cladding layers having the composition of AlGaInP.

Kidoguchi et al illustrates in figure 1A a self pulsating semiconductor laser having a saturable absorbing layer (106) with cladding layers (103) and (105a), the cladding layers having the composition of AlGaInP. The cladding layers do have a group V element of P and does not contain nitrogen.

Therefore, it would have been obvious at the time the invention was made to provide the laser device of Okumura with the cladding layers of Kidoguchi et al because it will provide to the formation of a self-pulsating semiconductor laser.

***Allowable Subject Matter***

Claims 2,4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 2 and 4,

None of the cited references discloses the saturable absorbing layer having the combination nitrogen (N) with another group V element as As or P, which will provide bandgap control and stabilization of the self-pulsation.

Claim 13-18, 20, 22 are allowed.

None of the cited references discloses the saturable absorbing layer having the combination nitrogen (N) with another group V element, which will provide bandgap control and stabilization of the self-pulsation.

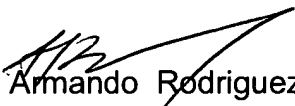
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is 571-272-1952. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 571-272-1941. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2828

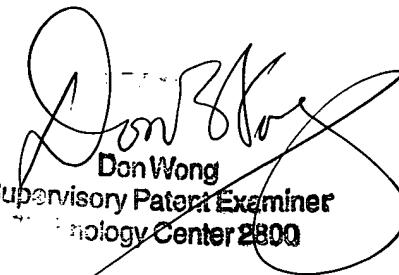
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Armando Rodriguez  
Examiner  
Art Unit 2828

Paul Ip  
Supervisor  
Art Unit 2828

AR/PI



Don Wong  
Supervisory Patent Examiner  
Technology Center 2800